

AD-A127 352 19318B MLRS MISSILE NUMBERS DK-106 DK-105 ROUND NUMBERS 1/1

V-417/PW-08 V-418. (U) ARMY ELECTRONICS RESEARCH AND

DEVELOPMENT COMMAND WSMR NM ATM.. D C KELLER FEB 83

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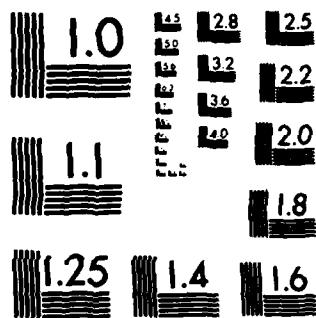
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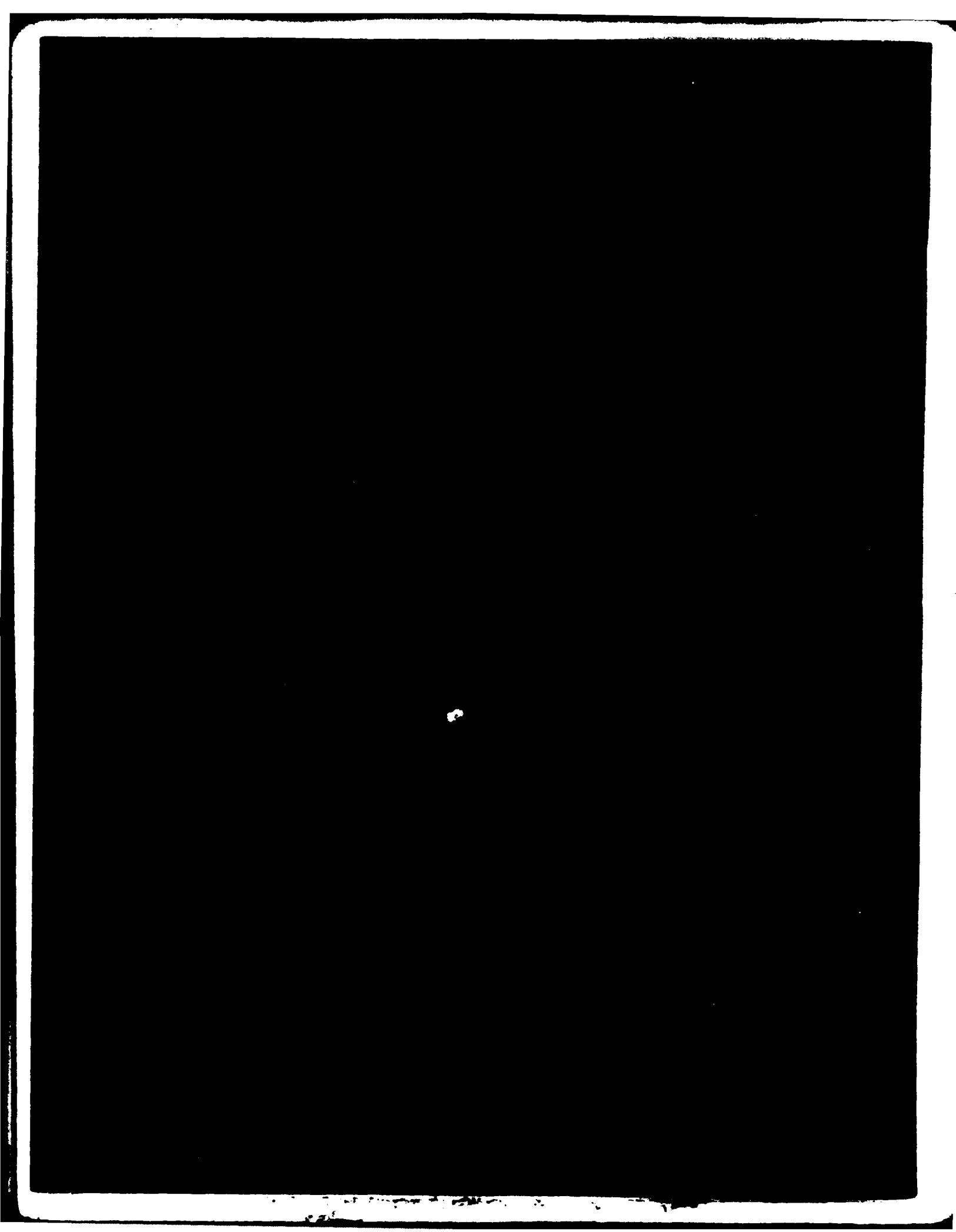
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REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
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17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report) Approved for public release; distribution unlimited.		
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19. KEY WORDS (Continue on reverse side if necessary and identify by block number)		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Meteorological data gathered for the launching of the 19310B MLRS. Missile Number DK-106, DK-105, Round Number V-A17/PN-08, V-A18/PN-09 are presented in tabular form.		
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INTRODUCTION

193103 MARS, Missile Numbers DK-106, and DK-105, Round Numbers V-417/PW-08 and V-418/PW-09, were launched from LC-33, White Sands Missile Range (WSMR), New Mexico, at 0839:26 and 0839:31 MST, 14 Feb 1983. The scheduled launch times were 0835:00 and 0835:04.5 MST.

DISCUSSION

Meteorological data were recorded and reduced by the White Sands Meteorological Team, Atmospheric Sciences Laboratory (ASL), White Sands Missile Range, New Mexico. The data were obtained by the following methods:

I. Observations

a. Surface

(1) Standard surface observations to include pressure, temperature ($^{\circ}\text{C}$), relative humidity, dew point ($^{\circ}\text{C}$), density (gm/m^3), wind direction and speed, and cloud cover were made at the LC-33 Met Site at T-0 Minutes.

(2) Anemometer data were provided from existing pole-mounted and tower-mounted anemometers at LC-33. Monitor of wind speed and direction from one anemometer was also provided in the launch control room.

b. Upper Air

(1) Low level wind data were obtained from Pilot-balloon observations at:

SITE AND ALTITUDE

LC-33 2 km
DON 2 km

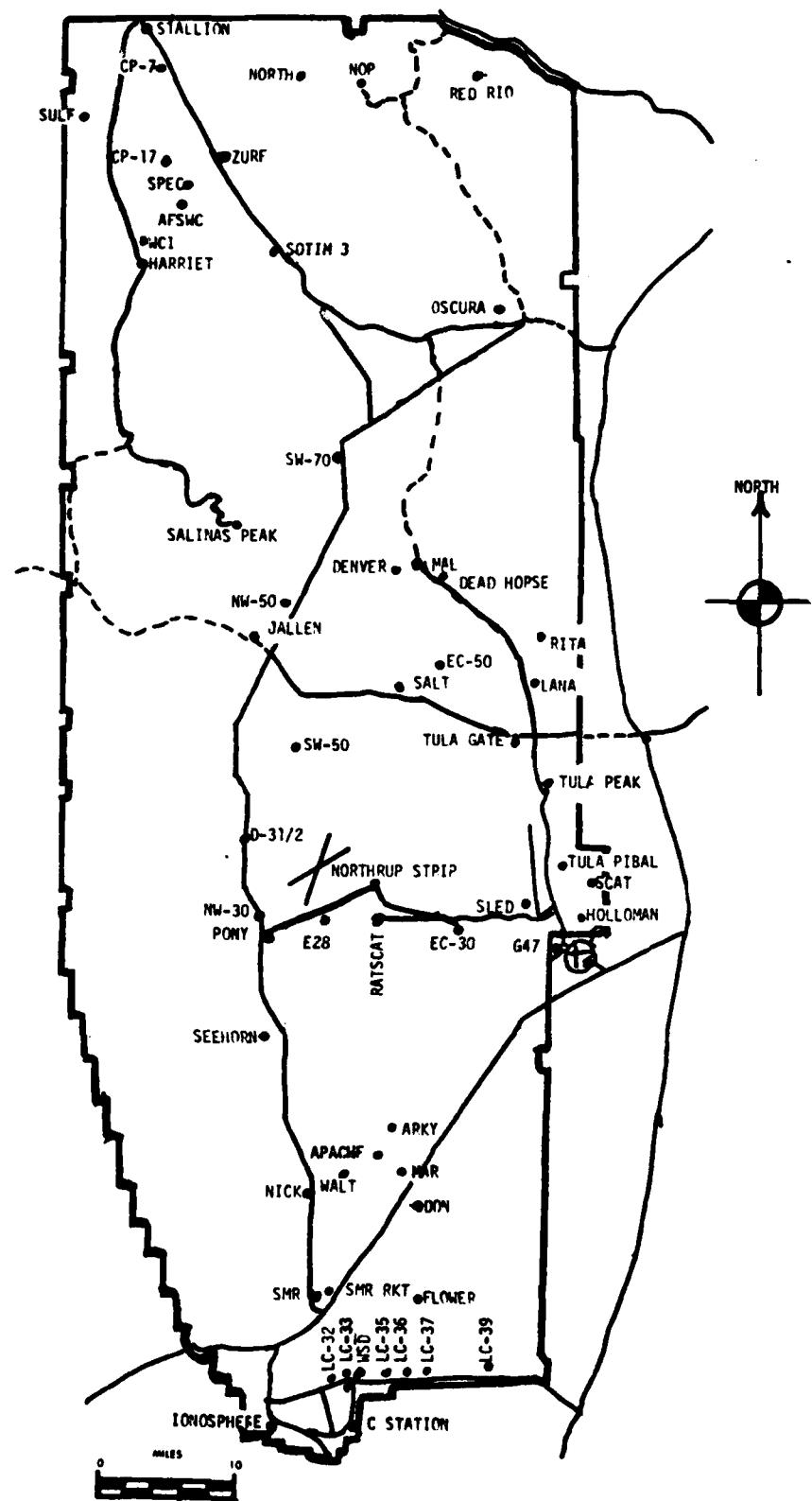
(2) Air structure data (rawinsonde) were collected at the following Met Site:

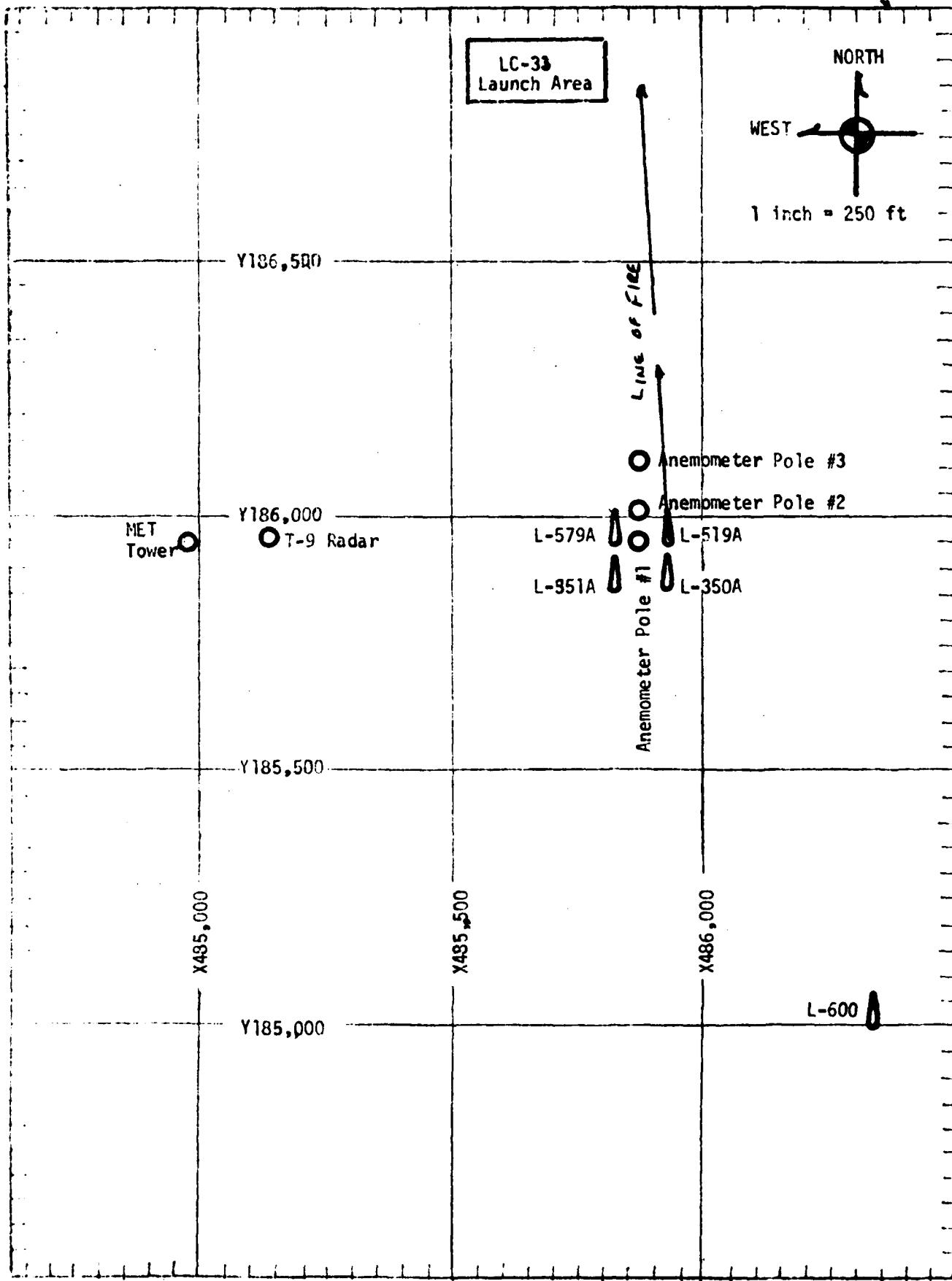
SITE AND TIME

WSD 0650 MST
LC-37 0730 MST
WSD 0830 MST

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WSMR METEOROLOGICAL SITES





PROJECT SURFACE OBSERVATION

STATION 1C-33 RIA

TABLE — 1

DATE 14 MONTH SEP YEAR 83

TIME H —	PRESSURE mb	TEMPERATURE °C	DEW POINT °C	RELATIVE HUMIDITY %	DENSITY gm/cm ³	WIND DIRECTION degrees	SPEED kts	CHARACTER kts	VISIBIL- ITY
0830	974.7	5.1	1.9	75					50

OBSTRUCTIONS TO VISIBILITY	CLOUDS			REMARKS		
	1st LAYER AMT	TYPE	2nd LAYER AMT	TYPE	3rd LAYER AMT	TYPE
	1	CU	4000	A	SC	4500

PSYCHROMETRIC COMPUTATION

TIME: MST	0830	
DRY BULB TEMP.	5.1	
WET BULB TEMP.	3.2	
WET BULB DEPR.	1.9	
DEW POINT	1.0	
RELATIVE HUMID.	75	

TABLE 2 LC-33 FIXED POLE ANEMOMETER MEASURED WINDS

POLE #1			POLE #2			POLE #3		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	276	05	-30	285	03	-30	299	05
-20	288	05	-20	285	04	-20	314	08
-10	282	05	-10	285	03	-10	320	10
0.0	268	04	0.0	299	04	0.0	312	10
+10	305	06	+10	305	05	+10	313	09

TABLE 3 LC-33 METEOROLOGICAL TOWER ANEMOMETER MEASURED WINDS (202 FT TOWER)

LEVEL #1, 12 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #2, 62 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	298	06	-30	288	06
-20	313	05	-20	295	06
-10	307	05	-10	297	07
0.0	311	05	0.0	300	05
+10	310	04	+10	296	06

LEVEL #3, 102 FEET X484,982.64, Y185,057.73, H3983.00 (base)			LEVEL #4, 202 FEET X484,982.64, Y185,057.73, H3983.00 (base)		
T-TIME SEC	DIR DEG	SPEED KNOTS	T-TIME SEC	DIR DEG	SPEED KNOTS
-30	303	07	-30	305	10
-20	306	09	-20	310	08
-10	313	08	-10	310	08
0.0	315	07	0.0	298	08
+10	312	08	+10	301	09

TABLE 4

T-TIME PILOT-BALLOON MEASURED WIND DATA

DATE 14 February 1983

SITE: LC-33

TIME: 0030 MST

WSTM COORDINATES:

X = 484,937.34

Y = 134,124.44

H = 3,975.57

SITE: 004

TIME 0030 MST

WSTM COORDINATES:

X = 511,938.37

Y = 247,396.36

H = 3,996.83

LAYER	MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		311	04
150		311	04
300		320	05
450		329	06
600		336	06
750		341	05
900		347	06
1050		343	09
1200		339	12
1350		335	14
1500		330	13
1650		327	26
1800		325	30
1950		323	31
2100		320	32

Data obtained from a double Theodolite tracked pilot-balloon observation.

LAYER	MIDPOINT METERS AGL	DIRECTION DEGREES	SPEED KNOTS
SURFACE		000	02
150		026	08
300		020	10
450		014	12
600		000	13
750		360	14
900		341	14
1050		322	15
1200		313	20
1350		319	26
1500		313	31
1650		305	33
1800		292	29
1950		297	24
2100		302	21

Data obtained from a single Theodolite tracked pilot-balloon observation.

ATTACH AND TELTYPE COMPUTER MET MESSAGES
14 February 1982

1050 06501 'IST	10-37	1050 0930 'IST
111TC113241064	111TC11324063	111TC11324064
141301122772	141450124072	141550122374
1701122773	1711000004 27730072	19490003 28050874
1715030115 277600063	21505013 27900061	21537025 27960063
22544023 27690037	22505017 27740035	22622018 27710837
23524020 27720076	23561010 27420725	23632017 27330797
24512038 27070742	24523033 27050747	24536024 26930743
25512044 26700772	25511049 26600771	25546027 26460702
26121043 26310052	26406045 26320652	26527029 26090652
27490045 259100627	27507043 26010616	27525022 25720626
275010140 25600577	28504039 25600577	28510030 25330670
285100132 25100540	29400041 26260539	29406035 25010532

1950.05.06 0650 UTC, and
ASCENDANT NO. 10

1950.05.06 0650 UTC, and
ASCENDANT NO. 10

01001111, CONSOLIDATE,
32.40003 LAT 06
106.57053 LONG 06

PERIODIC COORDINATE	DEPARTURE	DEPARTURE	DEPARTURE
AT 1111 LT	AT 1111 LT	AT 1111 LT	AT 1111 LT
1111.4 5089.0	3.0	1.2	0.0
1111.2 4.04.2	3.0	-1.5	0.0
850.0 4713.8	3.0	-0.0	10.0
840.3 5020.1	3.0	-0.6	7.5
830.4 6309.6	0.0	-2.7	0.2
771.0 7292.5	-1.4	-0.6	2.7
751.4 7955.0	-2.8	-9.9	5.8
751.6 8659.8	-3.4	-16.0	5.7
700.0 9000.0	-6.6	-19.1	3.6
626.0 11454.3	-10.5	-26.9	2.9
620.5 12653.5	-12.9	-24.8	3.6
625.0 12675.4	-13.1	-21.3	3.0
615.6 15250.8	-13.5	-28.0	6.0
567.2 15083.2	-18.4	-26.9	3.9
300.0 18133.4	-25.7	-36.3	3.0

STATION ALTITUDE 54000 FT 11000
IN FEET 63 96500 INCHES 11000
STATION NO. 16
STATION NO. 16

UPPER AIR DATA
0400020076
WHITE SANDS
TOWER - 7

GEODIAL COORDINATES
32.400043 LAT LEG
106.37033 LONG LEG

STATION ALTITUDE	PRESSURE	TEMPERATURE	REL. HUM.	REL. HUM.	DENSITY	SPEC. OF	IND. DATA	IND. DATA	IND. DATA
IN FEET	IN MILLIBARS	OF 1000 FT	DEGR. F.	DEGR. C.	IN/CM ³	SOLUB.	REFRACTION	REFRACTION	REFRACTION
54000.0	1075.4	3.0	102	30.0	1030.0	648.0	10.0	4.1	1.0002778
49000.0	1073.9	3.0	101	29.9	1028.1	648.4	6.4	4.1	1.0002776
45000.0	1050.8	3.0	100	29.8	1025.1	646.0	2.0	6.9	1.0002768
39000.0	1040.4	3.0	99	29.7	1025.4	646.0	0.7	11.5	1.0002764
35000.0	1025.2	2.1	98	29.6	1041.7	647.2	0.7	16.5	1.0002690
30000.0	1016.8	0.6	97	29.2	1027.2	646.6	0.3	21.3	1.0002565
29400.0	1014.6	-0.3	96	29.0	1012.2	646.0	0.2	26.3	1.0002499
27900.0	1009.6	-1.0	95	1.0	996.1	645.0	0.1	31.3	1.0002411
27500.0	1004.9	-1.4	94	0.7	980.6	642.2	0.4	34.8	1.0002344
26900.0	1004.4	-2.0	93	0.9	965.7	641.0	1.1	37.2	1.0002300
26300.0	1001.1	-3.0	92	1.8	949.2	640.6	0.3	39.6	1.0002242
26100.0	1000.0	-4.0	91	2.9	935.0	639.0	0.7	41.4	1.0002177
25900.0	998.0	-5.0	90	3.9	921.9	637.5	0.2	42.5	1.0002133
25700.0	994.5	-7.0	89	5.5	908.6	635.0	0.7	45.5	1.0002090
102000.0	981.0	-6.2	88	4.9	904.8	634.3	0.1	44.2	1.0002055
101900.0	981.0	-7.5	87	4.0	901.5	633.0	0.0	45.9	1.0002011
101800.0	984.4	-10.4	86	1.0	907.9	632.0	0.0	41.4	1.0001973
101700.0	982.0	-11.6	85	0.1	904.7	630.6	0.7	43.3	1.0001937
101600.0	980.7	-12.8	84	-0.5	901.7	629.0	0.3	46.2	1.0001894
101500.0	979.6	-13.9	83	-1.4	900.7	628.3	0.2	45.5	1.0001859
101400.0	978.1	-15.0	82	-2.3	900.7	627.2	0.2	46.5	1.0001816
101300.0	977.5	-16.0	81	-3.2	900.7	626.1	0.2	47.1	1.0001773
101200.0	976.1	-17.0	80	-4.1	900.7	625.0	0.1	47.7	1.0001730
101100.0	974.7	-18.0	79	-5.0	900.7	624.0	0.1	48.2	1.0001670
101000.0	973.4	-19.0	78	-5.9	900.7	623.0	0.1	48.7	1.0001627
100900.0	972.1	-20.0	77	-6.8	900.7	622.3	0.1	49.2	1.0001589
100800.0	970.8	-21.0	76	-7.7	900.7	621.3	0.1	49.7	1.0001549
100700.0	969.5	-22.0	75	-8.5	900.7	620.3	0.1	50.2	1.0001509
100600.0	968.2	-23.0	74	-9.4	900.7	619.3	0.1	50.7	1.0001462
100500.0	966.9	-24.0	73	-10.3	900.7	618.3	0.1	51.2	1.0001412
100400.0	965.6	-25.0	72	-11.2	900.7	617.3	0.1	51.7	1.0001362
100300.0	964.3	-26.0	71	-12.1	900.7	616.3	0.1	52.2	1.0001312
100200.0	962.9	-27.0	70	-13.0	900.7	615.3	0.1	52.7	1.0001262
100100.0	961.6	-28.0	69	-13.9	900.7	614.3	0.1	53.2	1.0001212
100000.0	960.3	-29.0	68	-14.8	900.7	613.3	0.1	53.7	1.0001162

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Latitude 33° 30' S
Longitude 110° 30' E
Sea Level 1000 ft
Pressure 40. 10

Latitude 11° 30' S
Longitude 107° 30' E
Sea Level 1000 ft
Pressure 40. 10

Latitude 11° 30' S
Longitude 107° 30' E
Sea Level 1000 ft
Pressure 40. 10

PRESSURE (MILLIBARS)	1000 FT					
850.0	4710.	3.0	-7.0	7.0	315.0	0.0
800.0	6510.	-7.0	-2.0	82.	295.0	4.5
750.0	8007.	-2.0	-10.0	57.	294.1	37.2
700.0	9721.	-6.6	-19.1	56.	286.5	45.1
650.0	11675.	-10.0	-26.3	27.	276.0	43.5
600.0	13678.	-14.7	-28.1	31.	278.0	39.9
550.0	15816.	-20.2	-30.7	36.	262.0	36.2
500.0	18109.	-25.7	-36.3	36.		

STATION ALTITUDE 4051.37 FEET MSL
141 EN. 13 NO. 073N HRC HGT
ASCLISTION NO. 4

SIGNIFICANT LEVEL DATA
0450180009
LC-37
TANL-0

GEODETIC COORDINATES
32.40175 LAT DEG
106.31232 LON DEG

MEASUREMENT	GEOMETRIC ALTITUDE MILLIMETERS MSL FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL. HUM. PERCENT
871.9	4051.4	3.1	93.0
860.2	4412.3	4.5	74.0
850.0	4731.6	4.4	64.0
844.3	5229.9	3.9	44.0
813.9	5888.6	2.4	37.0
763.5	7571.4	-2.2	45.0
743.9	8249.3	-2.8	32.0
700.0	9021.9	-6.5	23.0
651.7	11646.5	-9.7	20.0
609.5	13372.2	-14.1	48.0
591.7	14070.0	-14.7	39.0
568.5	15497.5	-18.3	36.0
542.7	16199.4	-20.2	46.0
526.7	16925.9	-22.1	42.0
511.5	17631.4	-24.0	49.0
500.0	18175.2	-25.9	62.0

STATION ALTITUDE 4051.37 FEET SL
14 DEG. N 073.00 MM, N 51.
ASCEND. 100. 9

UPPER AIR DATA
0450180009
L.C.-37
TAN 15 - 1

GEOMETRIC ALTITUDE
MSL FEET MILLIARS DEGREES, CENTIGRADE

GEOMETRIC PRESSURE
ALTITUDE
MSL FEET MILLIARS DEGREES, CENTIGRADE

GEOMETRIC ALTITUDE MSL FEET	GEOMETRIC PRESSURE MILLIBARS	TEMPERATURE FAH DEGREES	DEWPOINT DEGREES	REL. HUM. PERCENT	DENSITY GM/CUBIC METER	SPD OF WIND KNOTS	DIRCTN DEGREES (TN)	WIND DATA SPD IN KNOTS	DIRCTN OF WIND DATA	WIND DATA SPD IN KNOTS	DIRCTN OF WIND DATA
4051.4	871.9	50.1	2.1	93.0	1096.1	640.5	0.0	0.0	1.000279	0.0	1.000279
4500.0	857.4	40.7	-0.3	71.3	1073.0	650.0	305.7	4.1	1.000269	4.1	1.000269
5000.0	841.5	40.1	-4.5	51.2	1055.2	649.4	305.7	8.6	1.000257	8.6	1.000257
5500.0	825.9	30.3	-8.6	41.1	1039.3	648.2	305.7	13.1	1.000247	13.1	1.000247
6000.0	810.5	20.1	-16.9	37.5	1024.5	646.7	305.7	17.6	1.000242	17.6	1.000242
6500.0	795.2	0.7	-11.3	30.9	1010.3	645.1	305.7	22.1	1.000238	22.1	1.000238
7000.0	780.3	-0.6	-11.8	42.3	996.2	643.5	305.7	26.7	1.000235	26.7	1.000235
7500.0	765.6	-2.0	-12.4	44.7	982.5	641.9	299.5	31.6	1.000231	31.6	1.000231
8000.0	751.0	-2.6	-15.3	36.8	966.1	641.1	296.1	36.7	1.000225	36.7	1.000225
8500.0	736.7	-3.4	-18.2	30.6	950.7	640.1	295.4	41.7	1.000219	41.7	1.000219
9000.0	722.6	-4.6	-20.4	27.7	936.7	638.7	290.2	43.5	1.000215	43.5	1.000215
9500.0	708.6	-5.7	-22.6	24.8	922.9	637.2	287.3	45.5	1.000211	45.5	1.000211
10000.0	695.1	-6.8	-24.6	22.7	908.6	635.4	284.8	47.2	1.000207	47.2	1.000207
10500.0	681.6	-7.7	-25.7	21.9	894.2	634.9	283.8	47.2	1.000203	47.2	1.000203
11000.0	668.4	-8.6	-26.9	21.1	879.7	633.8	282.7	47.3	1.000200	47.3	1.000200
11500.0	655.2	-9.4	-28.0	20.2	865.6	632.7	281.6	47.4	1.000196	47.4	1.000196
12000.0	642.6	-10.6	-26.0	25.7	852.3	631.4	282.3	46.4	1.000194	46.4	1.000194
12500.0	630.0	-11.9	-24.6	33.6	839.5	629.9	283.0	45.4	1.000192	45.4	1.000192
13000.0	617.6	-13.2	-23.3	42.0	827.0	628.4	283.8	44.4	1.000189	44.4	1.000189
13500.0	605.4	-14.2	-23.2	46.4	814.0	627.1	284.2	43.4	1.000187	43.4	1.000187
14000.0	593.4	-14.6	-25.2	39.9	799.2	626.5	283.2	42.2	1.000182	42.2	1.000182
14500.0	581.5	-15.8	-26.8	38.1	781.5	625.1	282.3	41.0	1.000179	41.0	1.000179
15000.0	569.9	-17.0	-28.2	37.0	774.8	623.0	281.2	39.8	1.000176	39.8	1.000176
15500.0	558.0	-18.3	-29.6	36.0	763.1	622.0	280.4	39.8	1.000173	39.8	1.000173
16000.0	547.1	-19.7	-29.0	43.2	751.6	620.4	279.7	39.8	1.000171	39.8	1.000171
16500.0	536.0	-21.0	-29.9	44.3	740.3	618.7	278.7	39.8	1.000168	39.8	1.000168
17000.0	525.1	-22.3	-31.5	42.7	729.0	617.1	277.7	39.8	1.000165	39.8	1.000165
17500.0	514.3	-23.6	-31.6	47.7	717.9	615.5	276.7	39.8	1.000163	39.8	1.000163
18000.0	503.7	-25.3	-31.1	57.8	707.7	613.4	275.7	39.8	1.000160	39.8	1.000160

GEODETIC COORDINATES
32.49175 LAT DEG
106.31232 LONG DEG

STATION ALTITUDE 4951.37 FEET MSL
14 410.13 0730 HRS AST
ASCRSSION NO. 9

MANDATORY LEVELS
0450100009
LC-37
TAN 5-12

STATION COORDINATES
32°40'17" LAT DEG
106°31'23" LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	GEOPOTENTIAL FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRAVE	REL HUM. PERCENT	WIND DATA DIRECTION (TN) EFFECTS (TN)	WIND SPEED KNOTS
950.0	4728.	4.4	-1.8	64.	303.7
900.0	6340.	1.2	-11.2	39.	303.7
750.0	8030.	-2.6	-15.6	36.	295.9
700.0	9812.	-6.5	-24.1	23.	285.6
650.0	11700.	-9.9	-28.0	21.	281.9
600.0	13707.	-14.4	-24.1	4.3.	283.8
550.0	15853.	-19.3	-29.1	41.	42.9
500.0	18150.	-25.0	-31.0	62.	

STATION ALTITUDE 3989.00 FT +1 MST
14 FEB. 1953 0830 HRS. MST
ASCENSION NO. 17

SIGNIFICANT LEVEL DATA
045002077
WHITE SANDS
WATER

GEODETIC COORDINATES
32°40'43" LAT DEG
106°37'33" LON DEG

PRESSURE GEOMETRIC MILLIBARS	GEOMETRIC ALTITUDE MSL FEET	TEMPERATURE AIR DEPOINT DEGREES CENTIGRADE	REL.HUM. PERCENT
874.0	3989.0	6°.3	66.0
866.0	4298.5	5.5	41.0
858.0	4736.1	4.2	42.0
780.8	6679.8	-1.2	56.0
780.0	7006.6	-1.9	57.0
759.4	7703.5	-5.9	65.0
749.6	8040.0	-4.7	61.0
708.0	9795.6	-9.4	97.0
673.4	10776.5	-11.5	99.0
594.5	13876.7	-18.5	97.0
569.8	14913.2	-20.8	79.0
522.5	17005.5	-24.3	73.0
508.0	18055.8	-26.7	70.0
478.3	19102.8	-29.8	69.0
456.9	20171.4	-31.9	62.0
431.6	21486.6	-35.2	69.0
427.1	21727.4	-34.4	42.0
408.0	22790.1	-29.8	16.0
408.0	23253.5	-30.8	16.0
376.0	24692.1	-33.0	16.0
370.6	25027.4	-32.3	16.0
332.8	27502.8	-36.6	16.0
316.2	28667.5	-37.5	16.0
316.6	29074.5	-36.3	16.0
301.3	29769.9	-35.5	16.0
308.0	29869.3	-34.4	16.0
295.4	30225.5	-33.8	16.0
284.8	31068.8	-33.9	16.0
250.0	34042.3	-39.3	16.0
242.0	34773.9	-40.6	16.0
237.2	35224.0	-39.9	16.0
223.8	36527.0	-41.9	16.0
219.4	36970.7	-41.2	16.0
208.0	39034.4	-43.1	16.0
192.9	39840.2	-41.2	16.0
171.0	42525.6	-43.4	16.0
158.0	45199.9	-48.5	16.0
144.9	46150.0	-48.7	16.0
110.7	51837.6	-60.2	16.0
108.7	53769.9	-63.7	16.0

STATION ALTITUDE 3989.00 FEET SL
14 FEB. 63 0830 HRS MST
ASCENSION NO. 77

SIGNIFICANT LEVEL DATA
0450020077
WHITE SANDS
TRIF-12 cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE MILLIBARS	GEOMETRIC ALTITUDE MFT FEET	TEMPERATURE AIR DEGREES CENTIGRADE	DEWPNT PERCENT	REL.HUM.
100.0	53911.5	-62.6		
97.5	54427.9	-61.6		
92.7	57753.2	-66.8		
78.3	58455.6	-66.2		
75.3	59625.7	-68.1		
72.1	60484.4	-68.3		
70.0	61078.0	-62.7		
63.1	63216.4	-57.5		
50.0	67980.4	-65.6		
44.5	70344.5	-61.5		
38.3	73423.2	-60.9		
32.5	76833.4	-56.5		
30.0	78510.1	-57.3		
26.3	81269.2	-56.3		
20.0	87069.9	-52.9		
14.1	94662.4	-45.5		
10.9	100354.4	-45.1		

STATION ALTITUDE 3989.00 FEET MSL
14 FEB. 83 0830 HR, MST
ASCENSION NO. 17

UPPER AIR DATA
0400020077
WHITE SANDS
TAN-1

GEOMETRIC ALTITUDE FEET MSL	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES CENTIGRADE	REL.HUM. PERCENT	DENSITY GM/CUBIC METER	SPEED OF SOUND KNOTS	WIND DATA DIRECTION DEGREES (TEN)	INDEX OF REFRACTION
3989.0	874.0	60.3	4	60.0	1086.6	652.1	270.0
4000.0	873.6	60.3	2	65.1	1086.3	652.1	271.4
4500.0	657.5	40.9	7.1	41.5	1072.7	650.1	325.6
5000.0	441.6	50.5	7.6	43.4	1078.2	648.4	345.4
5500.0	285.4	2.1	7.9	47.5	1043.6	640.8	353.3
6000.0	110.4	7	0.2	51.1	1029.3	645.2	356.5
6500.0	79.2	7	0.7	50.7	1015.2	643.5	350.2
7000.0	78.0	10.9	9.5	57.0	1000.5	642.1	345.7
7500.0	66.4	3.5	0.4	62.7	986.6	640.4	338.6
8000.0	50.8	4.6	10.9	61.5	972.6	638.4	332.7
8500.0	36.3	2.9	10.4	70.4	958.5	637.3	325.0
9000.0	22.1	7.3	10.0	80.7	944.7	635.7	317.8
9500.0	10.1	6.6	0.4	70.9	931.0	634.1	311.2
10000.0	6.4	9.6	10.2	97.4	917.3	632.7	305.0
10500.0	3.0	9.9	1.1	98.4	903.1	631.3	299.9
11000.0	1.7	12.0	12.1	98.9	889.1	630.0	297.8
11500.0	0.6	13.1	13.3	98.5	875.2	628.0	295.9
12000.0	0.1	14.3	14.5	98.2	861.6	627.2	296.9
12500.0	0.2	15.6	15.8	97.9	848.3	625.8	297.7
13000.0	0.6	16.5	16.8	97.6	835.1	624.4	296.6
13500.0	0.0	17.6	18.0	97.2	822.2	623.0	295.2
14000.0	0.0	18.6	19.4	94.9	809.4	621.4	292.6
14500.0	0.0	19.9	21.6	86.2	796.6	620.2	289.8
15000.0	0.0	20.9	23.6	78.8	783.8	618.4	285.8
15500.0	0.1	21.8	24.7	77.3	770.3	617.8	282.0
16000.0	0.7	22.6	25.7	75.9	757.0	616.0	276.7
16500.0	0.0	23.5	26.7	74.4	744.0	615.8	272.0
17000.0	0.0	22.6	24.3	27.7	73.0	731.3	614.7
17500.0	0.0	21.8	25.4	71.6	719.4	613.3	267.9
18000.0	0.9	20.1	20.0	70.2	707.8	611.9	266.9
18500.0	0.0	19.0	30.3	69.6	697.1	610.1	267.0
19000.0	0.0	18.0	31.8	69.1	686.6	608.2	267.0
19500.0	0.0	17.0	33.7	73.8	675.1	606.6	267.5
20000.0	0.0	16.0	31.6	70.9	663.5	605.6	268.0
20500.0	0.0	15.0	32.7	70.8	652.5	604.1	269.8
21000.0	0.0	14.0	34.0	73.8	641.9	602.6	273.0
21500.0	0.0	13.0	35.2	67.5	631.3	601.1	277.7
22000.0	0.0	12.0	43.3	35.3	612.8	603.5	283.4
22500.0	0.0	11.0	31.1	25.1	594.4	606.2	289.9
23000.0	0.0	10.0	40.4	16.0	579.9	607.2	295.8

GEODETIC COORDINATES
32.40043 LAT UEG
106.37033 LON UEG

STATION ALTITUDE 3949.00 FT SL
14 FLN. 63 0030 HRS MST
ASCENSION NO. 17

UPPER AIR DATA
0450020077
WHITE SANDS
TAN -1 Cont'd

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES C	DEWPOINT PERCENT	REL. HUM. PERCENT	SPEED OF SOUND METER	WIND DATA DIRECTION DEGREES (TN)	WIND SPEED KNOTS	INFLUX OF REFRACTION
25500.0	395.0	-11.2	-48.6	16.0	369.8	600.0	302.2	41.3
24000.0	387.4	-11.4	-48.2	16.0	359.4	605.1	307.7	40.9
24500.0	379.1	-12.7	-49.9	16.0	349.3	604.1	312.8	40.8
25000.0	371.0	-12.4	-49.6	16.0	336.8	604.5	313.9	40.9
25500.0	363.1	-13.1	-50.2	16.0	326.9	603.4	315.0	41.1
26000.0	355.3	-14.0	-50.9	16.0	317.5	602.5	312.9	39.6
26500.0	347.6	-14.9	-51.7	16.0	308.2	601.4	310.4	38.1
27000.0	340.2	-15.7	-52.4	16.0	409.1	600.3	307.0	35.2
27500.0	332.8	-16.6	-53.1	16.0	490.1	599.2	302.8	32.0
28000.0	325.6	-17.0	-51.5	16.0	480.3	598.7	295.2	33.0
28500.0	318.5	-17.4	-53.1	16.0	470.6	596.2	289.3	38.4
29000.0	311.6	-16.5	-51.8	16.0	458.7	595.3	287.9	41.7
29500.0	304.9	-15.8	-52.5	16.0	447.5	600.2	286.5	35.9
30000.0	298.3	-14.2	-51.1	16.0	434.8	602.3	288.4	33.9
30500.0	291.9	-13.8	-50.8	16.0	424.9	602.7	291.2	32.7
31000.0	285.6	-13.9	-50.9	16.0	415.9	602.0	293.5	30.5
31500.0	279.7	-14.7	-51.5	16.0	408.2	601.6	296.0	28.2
32000.0	273.4	-15.6	-52.3	16.0	400.9	600.9	296.8	26.1
32500.0	267.0	-16.5	-51.0	16.0	393.7	599.3	293.0	24.5
33000.0	261.7	-17.4	-53.8	16.0	386.7	598.2	288.7	23.0
33500.0	256.0	-18.3	-54.0	16.0	379.8	597.0	283.5	23.0
34000.0	250.5	-19.2	-55.3	16.0	373.0	595.9	278.3	24.2
34500.0	245.0	-20.1	-56.6	16.0	366.2	594.5	274.5	26.3
35000.0	239.6	-20.2	-56.6	16.0	358.4	594.5	275.9	32.1
35500.0	234.3	-20.3	-56.6	16.0	350.6	594.4	276.7	37.9
36000.0	229.1	-21.1	-56.6	16.0	344.0	593.5	276.3	42.2
36500.0	224.1	-21.9	-56.6	16.0	337.5	592.5	275.8	45.2
37000.0	219.1	-21.2	-56.6	16.0	329.1	593.3	274.8	41.7
37500.0	214.3	-21.7	-56.6	16.0	322.5	592.7	274.2	39.1
38000.0	209.5	-22.1	-56.6	16.0	315.9	592.1	274.5	37.9
38500.0	204.7	-22.6	-56.6	16.0	309.5	591.5	274.5	37.5
39000.0	200.3	-23.1	-56.6	16.0	303.3	590.9	274.4	37.3
39500.0	195.3	-22.6	-56.6	16.0	295.2	592.2	275.8	40.1
40000.0	191.5	-21.5	-56.6	16.0	287.8	593.2	277.3	43.5
40500.0	187.3	-21.7	-56.6	16.0	281.9	592.0	278.4	47.0
41000.0	183.1	-22.2	-56.6	16.0	276.2	592.1	279.4	50.5
41500.0	179.1	-22.6	-56.6	16.0	270.5	591.0	277.6	45.7
42000.0	175.1	-23.0	-56.6	16.0	265.0	591.1	275.0	40.3
42500.0	171.2	-23.4	-56.6	16.0	259.6	590.5	272.3	37.6
43000.0	167.3	-24.2	-56.6	16.0	254.7	589.4	269.8	36.7

• AT LEAST ONE ;52.5MEN RELATIVE HUMIDITY VALUE WAS USED IN THE INTERPOLATION.

COPY AVAILABLE TO DTIC DOES NOT
PERMIT FULLY LEGIBLE REPRODUCTION

STATION ALTITUDE 3989.00 FT MSL
14 FEB. 03 0830 HRS, MST
ASCENSION NO. 11

UPPER AIR DATA
04SON20077
WHITE SANDS
TAF 17-17 Cont'd.

GEODETIC COORDINATES
32.49043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FLEET	PRESSURE MILLIBARS	TEMPERATURE AIR DEGREES	TEMPERATURE AIR DEGREES	REL. HUM. PERCENT	REL. HUM. PERCENT	SPEED OF SOUND METER	DENSITY AIR/SECURE METER	WIND DATA DIRECTION DEGREES(10)	WIND DATA SPEED KNOTS	INDEX OF REFRACTION
43500.0	165.6	-45.1	249.9	508.3	268.4	37.0	1.000056			
44000.0	159.9	-46.0	245.2	587.1	269.6	40.2	1.000055			
44500.0	156.3	-46.9	240.6	586.0	270.6	43.5	1.000054			
45000.0	152.8	-47.8	236.1	584.8	272.8	41.5	1.000053			
45500.0	149.3	-48.7	231.6	583.9	275.3	39.2	1.000052			
46000.0	145.9	-48.7	226.4	583.7	276.5	37.3	1.000050			
46500.0	142.5	-49.4	221.9	582.7	276.6	35.6	1.000049			
47000.0	139.2	-50.4	217.7	581.4	276.1	35.8	1.000048			
47500.0	135.9	-51.4	213.6	580.1	275.3	37.1	1.000048			
48000.0	132.6	-52.4	209.5	578.8	277.4	36.1	1.000047			
48500.0	129.6	-53.5	205.6	577.4	280.9	39.0	1.000046			
49000.0	126.6	-54.5	201.7	576.1	282.9	39.7	1.000045			
49500.0	123.7	-55.5	197.9	574.8	283.6	40.2	1.000044			
50000.0	120.8	-56.5	194.2	573.4	284.1	40.5	1.000043			
50500.0	117.9	-57.5	190.5	572.1	280.6	36.0	1.000042			
51000.0	115.2	-58.5	186.9	570.8	276.7	35.7	1.000042			
51500.0	112.5	-59.1	183.4	569.4	271.5	33.1	1.000041			
52000.0	109.8	-60.5	179.9	568.1	264.8	30.6	1.000040			
52500.0	107.2	-61.4	176.3	566.9	257.5	27.6	1.000039			
53000.0	104.6	-62.3	172.8	565.7	248.9	24.2	1.000038			
53500.0	102.0	-63.2	169.5	564.5	240.0	20.7	1.000038			
54000.0	99.6	-62.4	164.6	563.5	230.5	16.4	1.000037			
54500.0	97.2	-61.7	160.1	562.2	221.0	13.1	1.000036			
55000.0	94.9	-62.5	156.7	560.4	217.5	10.5	1.000035			
55500.0	92.6	-63.5	153.5	564.4	211.0	8.0	1.000034			
56000.0	90.2	-64.1	150.3	565.3	222.7	6.4	1.000033			
56500.0	88.0	-64.8	147.2	562.3	243.2	6.1	1.000033			
57000.0	85.9	-65.6	144.1	561.2	271.0	7.1	1.000032			
57500.0	83.7	-66.4	141.1	560.2	274.1	11.0	1.000031			
58000.0	81.7	-66.3	137.8	559.0	274.8	15.1	1.000031			
58500.0	79.7	-66.4	134.2	560.2	272.5	18.6	1.000030			
59000.0	77.7	-66.6	131.0	559.9	259.8	20.0	1.000029			
59500.0	75.8	-67.8	128.5	558.3	249.2	22.3	1.000029			
60000.0	73.9	-68.2	125.6	557.7	243.1	24.3	1.000028			
60500.0	72.0	-68.2	122.4	557.0	239.4	26.0	1.000027			
61000.0	70.3	-65.4	116.7	564.2	236.0	27.6	1.000026			
61500.0	68.6	-61.7	113.0	566.5	242.7	26.0	1.000025			
62000.0	66.9	-60.5	109.6	568.2	249.5	24.7	1.000024			
62500.0	65.3	-59.2	106.4	569.8	259.2	21.6	1.000024			
63000.0	63.8	-58.0	103.5	571.4	278.3	16.8	1.000023			

STATION ALTITUDE 3999.70 FT. T MSL
IN PER. 83 9830 INCHES HGT
ASCENSION NO. 77

UPPER AIR DATA
0450020077
WHITE SANDS
MARCH 11, 1947

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

GEOMETRIC ALTITUDE MSL FEET	PRESSURE MILLIBARS	TEMPERATURE DEGREES	WIND VELOCITY CENTIGRADE	REL.HUM. PERCENT	REL.HUM. PERCENT	WIND SOUND METER	SPEED OF SOUND METERS (IN)	WIND DIRECTION DEGREES (IN)	WIND SPEED KNOTS	INDEX OF REFRACTION
65500.0	62.2	-58.0		100.0	571.5	98.7	570.3	300.5	14.8	1.000022
64000.0	60.7	-58.8		96.7	569.2	94.8	568.1	322.7	14.4	1.000022
64500.0	59.3	-59.7		92.8	566.9	92.8	566.9	355.7	16.6	1.000022
63000.0	57.8	-60.5		91.0	565.6	90.5	565.6	12.1	16.6	1.000021
62500.0	56.4	-61.4		89.1	564.3	89.1	564.3	30.5	15.4	1.000021
60000.0	52.1	-62.2		87.3	563.0	85.6	562.4	45.7	15.2	1.000020
60500.0	53.7	-63.1		83.8	561.3	81.4	562.5	49.1	13.5	1.000020
67000.0	52.5	-63.9		81.4	562.5	79.4	563.6	53.6	11.9	1.000019
67500.0	51.2	-64.8		77.7	560.0	72.7	560.8	40.7	9.9	1.000019
68000.0	50.9	-65.6		70.9	558.9	70.9	559.9	20.3	8.9	1.000019
68500.0	49.7	-64.7		69.2	557.9	69.2	557.9	10.8	8.6	1.000018
69000.0	47.5	-63.8		67.5	556.8	67.5	556.8	21.1	8.9	1.000018
69500.0	46.2	-63.0		65.8	555.7	65.8	555.7	31.1	9.2	1.000017
70000.0	45.0	-62.1		72.7	554.0	72.7	554.0	48.2	7.3	1.000017
70500.0	44.2	-61.5		72.7	552.9	72.7	552.9	78.4	6.0	1.000016
71000.0	43.1	-61.4		70.9	551.9	70.9	551.9	112.2	6.6	1.000016
71500.0	42.1	-61.3		69.2	550.9	69.2	550.9	158.6	6.5	1.000015
72000.0	41.1	-61.2		67.5	549.9	67.5	549.9	155.6	11.6	1.000015
72500.0	40.1	-61.1		65.8	548.9	65.8	548.9	164.2	10.6	1.000015
73000.0	39.1	-61.0		64.2	547.9	64.2	547.9	182.9	7.7	1.000014
73500.0	38.2	-60.8		62.6	546.9	62.6	546.9	215.4	6.3	1.000014
74000.0	37.3	-60.2		60.9	545.9	60.9	545.9	225.6	5.5	1.000014
74500.0	36.4	-59.5		59.3	544.9	59.3	544.9	238.3	5.0	1.000013
75000.0	35.5	-58.9		57.7	543.9	57.7	543.9	248.3	2.9	1.000013
75500.0	34.7	-58.2		56.2	542.9	56.2	542.9	61.3	2.1	1.000013
76000.0	33.8	-57.6		54.7	541.9	54.7	541.9	64.2	7.2	1.000012
76500.0	33.0	-56.9		53.2	540.9	53.2	540.9	61.9	9.9	1.000012
77000.0	32.2	-56.6		51.9	539.9	51.9	539.9	58.4	11.2	1.000011
77500.0	31.5	-56.4		50.7	538.9	50.7	538.9	55.7	12.5	1.000011
78000.0	30.7	-57.1		49.6	537.9	49.6	537.9	58.4	11.9	1.000011
78500.0	30.0	-57.3		48.4	537.4	48.4	537.4	63.0	10.8	1.000011
79000.0	29.3	-57.1		47.1	537.0	47.1	537.0	68.6	9.9	1.000011
79500.0	28.6	-56.9		46.1	537.2	46.1	537.2	63.7	9.9	1.000010
80000.0	27.9	-56.8		45.0	537.1	45.0	537.1	58.8	10.0	1.000010
80500.0	27.3	-56.6		43.9	537.3	43.9	537.3	54.1	10.1	1.000010
81000.0	26.6	-56.4		42.8	537.6	42.8	537.6	49.0	9.8	1.000010
81500.0	26.0	-56.2		41.8	537.9	41.8	537.9	40.7	9.6	1.000009
82000.0	25.4	-55.9		40.7	537.3	40.7	537.3	40.3	9.3	1.000009
82500.0	24.8	-55.6		39.7	537.6	39.7	537.6	40.6	8.8	1.000009
83000.0	24.2	-55.3		38.8	537.0	38.8	537.0	40.9	8.6	1.000009

STATION ALTITUDE 349.00 FT T-5L
10 FEB. 53 0830 HRS. MST
ASST. STATION NO. 11

UPPER AIR DATA
0450020077
WHITE SANDS
TABLE F-17 cont'd.

UTODETIC COORDINATES
32°40'04.3 LAT DEG
106°37'03.3 LON DEG

STATION ALTITUDE	ATM PRESSURE	TEMPERATURE	REL. HUM.	SOUND SPEED	WIND DATA	WIND
ASST. STATION NO.	MSL FEET	ATM DEPOINT	PERCENT	CV/CUBIC METER	DIRECTION	SPEED
	MILLIBARS	DEGREES C	GRADE	KNOTS	DEGREES TN	KNOTS
45000.0	23.7	-45.0		37.8	575.4	49.5
44000.0	23.1	-45.7		36.9	575.8	66.3
43500.0	22.6	-45.4		36.0	576.2	81.8
43000.0	22.1	-45.1		35.1	576.6	95.7
42500.0	21.7	-45.8		34.2	577.0	103.5
42000.0	21.9	-53.5		33.4	577.3	111.7
41500.0	20.5	-53.2		32.5	577.7	112.7
41000.0	20.1	-52.9		31.7	578.1	112.2
40500.0	19.6	-52.5		31.0	578.7	109.5
40000.0	19.2	-52.0		30.2	579.4	104.5
39500.0	18.7	-51.5		29.4	580.0	298.6
39000.0	18.3	-51.0		28.7	580.6	297.5
38500.0	17.9	-50.5		28.0	581.3	296.4
38000.0	17.5	-50.0		27.3	581.9	294.4
37500.0	17.1	-49.6		26.6	582.5	292.1
37000.0	16.7	-49.1		25.9	583.2	290.7
36500.0	16.3	-48.6		25.3	583.8	294.0
36000.0	15.9	-48.1		24.7	584.4	297.4
35500.0	15.6	-47.6		24.1	585.1	300.9
35000.0	15.2	-47.1		23.5	585.7	301.7
34500.0	14.9	-46.6		22.9	586.3	302.1
34000.0	14.5	-46.1		22.3	587.0	302.5
34500.0	14.2	-45.7		21.8	587.6	303.6
35000.0	13.9	-45.5		21.2	587.8	305.2
35500.0	13.6	-45.4		20.8	587.9	307.9
36000.0	13.3	-45.4		20.3	587.9	302.7
36500.0	13.0	-45.4		19.8	588.0	289.1
37000.0	12.7	-45.3		19.4	588.0	280.4
37500.0	12.4	-45.3		19.0	588.1	274.6
38000.0	12.1	-45.3		18.5	588.1	15.0
38500.0	11.9	-45.2		18.1	588.1	1.000004
39000.0	11.6	-45.2		17.7	588.1	1.000004
39500.0	11.3	-45.2		17.3	588.2	1.000004
40000.0	11.1	-45.1		16.9	588.3	1.000004

STATION ALTITUDE 3989.00 FEET SL
14 PER. AS
ASCENSION NO. 11

MANDATORY LEVELS
0450020077
WHITE SANDS
TAN - 17

GEODETIC COORDINATES
32.40043 LAT DEG
106.37033 LON DEG

PRESSURE GEOPOTENTIAL MILLIBARS	FEET	TEMPERATURE DEGREES	AIR DEWPONT CENTIGRADE	REL. HUM. PERCENT	WIND DATA	
					DIR ECTN DEGREES (TN)	SPEED KNOTS
450.0	4733.	4.2	-1.5	42.	337.4	5.4
600.0	6338.	-0.3	-8.5	54.	352.0	15.3
750.0	8019.	-4.7	-11.0	61.	332.4	23.0
700.0	9796.	-9.4	-9.8	97.	307.6	26.5
650.0	11653.	-13.5	-13.7	98.	296.3	29.1
600.0	13635.	-18.0	-18.3	97.	294.4	29.6
550.0	15751.	-22.2	-25.2	77.	279.2	32.7
500.0	18031.	-26.7	-30.5	70.	266.9	40.7
450.0	20494.	-32.8	-35.2	79.	269.8	45.4
400.0	23216.	-30.6	-48.3	16.	299.0	42.1
350.0	26303.	-34.6	-51.4	16.	311.2	38.6
300.0	29812.	-34.4	-51.3	16.	287.6	34.2
250.0	33970.	-39.3	-55.4	16.	27b.1	24.3
200.0	38942.	-43.1			274.3	37.3
175.0	41907.	-43.0			275.0	40.4
150.0	45279.	-48.5			274.6	39.8
125.0	49167.	-55.0			2dJ.3	40.0
100.0	53746.	-62.6			233.1	17.3
80.0	58224.	-66.4			275.1	18.3
70.0	60869.	-62.7			237.2	27.5
60.0	64034.	-59.3			334.2	15.2
50.0	67776.	-65.6			22.7	9.0
40.0	72214.	-61.1			161.0	10.7
30.0	78177.	-57.3			62.7	10.9
25.0	81971.	-55.7			40.4	9.0
20.0	86665.	-52.9			112.1	4.7
15.0	92838.	-46.8			301.9	0.6